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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/607,045	06/27/2003	Ryuzo Okada	238395US2RD	6417

22850 7590 12/05/2006

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EXAMINER	
SENFI, BEHROOZ M	

ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 12/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/607,045	OKADA ET AL.	
	Examiner	Art Unit	
	Behrooz Senfi	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 June 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *6/27/2003*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 - 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Yoshioka et al (US 5,461,357).

Regarding claims 1 and 17, Yoshioka '357 discloses, an image processing apparatus (i.e. fig. 1) comprising: means for inputting a plurality of frame images serving as video images (fig. 17, camera 28); means for detecting, from each frame image in the plurality of frame images, a straight-line component in a specific direction (figs. 16 – 18); means for generating an obstacle candidate area as an image area in a vicinity of the detected straight-line component (figs. 17 – 18); means for tracking the obstacle candidate area in an image succeeding each frame image in the plurality of frame images (figs. 16 – 18, abstract, lines 1 – 4, col. 1, lines 38 – 47), and producing a tracking result for the obstacle candidate area and determining, using the tracking result of three or more obstacle candidate areas, whether the three or more obstacle candidate areas belong to a specific plane and producing a determination result (figs. 14 and 18, wherein the obstacles are being track in different zones/areas, cols. 1 – 2, lines 59 – 34) and means for detecting an obstacle based on the determination result (cols. 3 – 4, lines 61 – 10).

Regarding claims 2 – 3 and 18 - 19, Yoshioka '357 discloses, wherein the means for detecting, from each frame image in the plurality of frame images, detects a straight-line component in the horizontal direction (figs. 16 – 18).

Regarding claims 4 and 20, Yoshioka '357 discloses, wherein the means for tracking includes: means for setting an image area in a vicinity of the detected straight-line component as a search area for the obstacle candidate area (the image taking by the camera in figs 16 – 18) and means for tracking the obstacle candidate area (fig. 14, is the zones S1 – S3) by comparing an image feature in the obstacle candidate area (S1 – S3) with an image feature in the search area (search area is the area determining section of the image, where the judgment and tracking of whether or not the obstacle belongs to the small zone is based on comparison of the parameters, fig. 6, col. 5, lines 45 – 63).

Regarding claim 6, Yoshioka '357 discloses, means for selecting a candidate area group consisting of three or more obstacle candidate areas (fig. 14, is the zones S1 – S3) and computing a fitness between the candidate area group (i.e. obstacle area) and a predetermined plane (i.e. area determination section for determining the detection area) and evaluating whether the candidate area group belongs to the predetermined plane based on the fitness (i.e. the judgment as to which split zone the obstacle belongs to among a plurality of zones, col. 5, lines 60 – col. 6, lines 17).

Regarding claim 7, Yoshioka '357 discloses, wherein means for detecting an obstacle detects when a number of obstacle candidate areas that are determined by

the means for determining not to belong to the specific plane is greater than a predetermined number (col. 5, lines 45 – 64).

Regarding claim 5, Yoshioka '357 discloses, wherein the means for tracking eliminates the obstacle candidate area when a trajectory of the obstacle candidate area tracked over the plurality of frame images is not smooth (figs. 17 – 18, col. 9, lines 39 – 60).

Regarding claim 8, Yoshioka '357 discloses, means for estimating a position of the obstacle in a frame image based on a motion of the three or more obstacle candidate areas (col. 4, lines 1 – 10, col. 6, lines 55 – col. 7, lines 42).

Regarding claim 9, the limitations claimed have been analyzed and rejected with respect to claim 1 above.

Regarding claims 10 – 16, the limitations claimed have been analyzed and rejected with respect to claims 2 - 8 above.

Contact

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Behrooz Senfi** whose telephone number is **(571) 272-7339.**

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, **Mehrdad Dastouri** can be reached on **(571) 272-7418.**

Hand-delivered responses should be brought to Randolph Building, 401 Dulany Street, Alexandria, Va. 22314.

Any inquiry of a general nature or relative to the status of the application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is **(571) 272-6000,**

Or faxed to:

(571) 273-8300

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

B.M.S.

TUNG VO
PRIMARY EXAMINER